

# Training and Qualification Program Update



New England Pipeline Safety Representatives  
Virtual Pipeline Safety Seminar  
April 28, 2021

***Karl Baker, CT Public Utilities Regulatory Authority***  
***Paul Armstrong, Northeast Gas Association***

# Discussion Topics

- Why change?
- Redefining the Word *Qualified*
- Guiding Principles
- Training
- Evolving OQ Models
- Expansion of Performance Evaluations
- 3rd Party Support for Performance Evaluations
- OQ Initiatives & Activities
- CT and NY proposed rules



# Why change?

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## ➤ ***CT PURA inspection results (≈2015-2017)***

- Qualified, but task performed incorrectly – 29 times
- Not qualified, but task performed correctly – 14 times
- Not qualified and task performed incorrectly – 0 times

***Logic dictates that you should never qualify your people!***

# Why change?

## ➤ *Cheating scandal (≈2016-2017)*

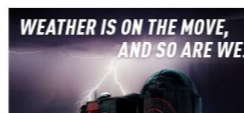


### I-Team: Group of Gas Pipe Workers Contracted by Con Edison, National Grid 'Likely' Cheated on Qualification Exams, Investigators Say

By Pei-Size Cheng • Published December 21, 2016



City officials are responding to an exclusive I-team report about how utility workers who installed and worked on gas mains around New York City may have not been qualified to do it. Pei-Size Cheng reports.



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23 Apr, 2020

## ConEd reaches \$15M settlement over pipeline safety, contractor test cheating

Consolidated Edison Co. of New York Inc. reached a \$15 million settlement with state regulators over natural gas pipeline safety lapses after its contractors cheated on operator qualification exams.

The five-member New York State Public Service Commission, or PSC, voted unanimously April 23 to approve the settlement. The agreement requires ConEd and its shareholders to pay the penalty amount, which will go toward deploying methane detectors and other safety measures on ConEd's gas delivery system in parts of New York City and Westchester County.

The decision concluded the current phase of the proceeding initiated in March 2019, in which the PSC ordered ConEd to explain why it should not be penalized for committing an alleged 644 safety violations. Those allegations included letting employees with lapsed qualifications work on pipeline projects and allowing noncompliant contract work on ConEd's system by failing to adequately oversee contractors.



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Theme  
**Energy**

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March 2021

## Why change?

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***I can pass the written exams!***

# Redefining The Word “Qualified”



## ➤ **Qualification** as a component of **Competency**

- Core Skills training
- Company-specific training
- On-the-job training/experience
- Company culture expectations
- Company requirements
- Demonstrating Knowledge, Skill and Ability
  - Knowledge – online exam and performance evaluation
  - Skill – performance evaluation
  - Ability – integral with performance evaluation

## ➤ *Broadening the scope of OQ to encompass the development of an individual's knowledge, skills, and abilities required to work on gas systems.*

# OQ Guiding Principles

- ✓ ***Operational Ownership***
- ✓ ***Focus on Competency Development***
  - Fundamental knowledge & skills
  - Organization-specific procedures, work methods, equipment and materials of construction
  - Continuous learning
- ✓ ***Execution***
  - Training: Initial, Progression, OJT, Refresher, Company-specific overlay
  - Comprehensive Assessments: Knowledge, Skill, Organization-specific procedures, work methods, and requirements
  - Ensuring contractors have an *equivalent* approach to workforce competency
  - Documentation of training and qualifications



**Operator Qualification  
Compliance Program**

***Written Plan***

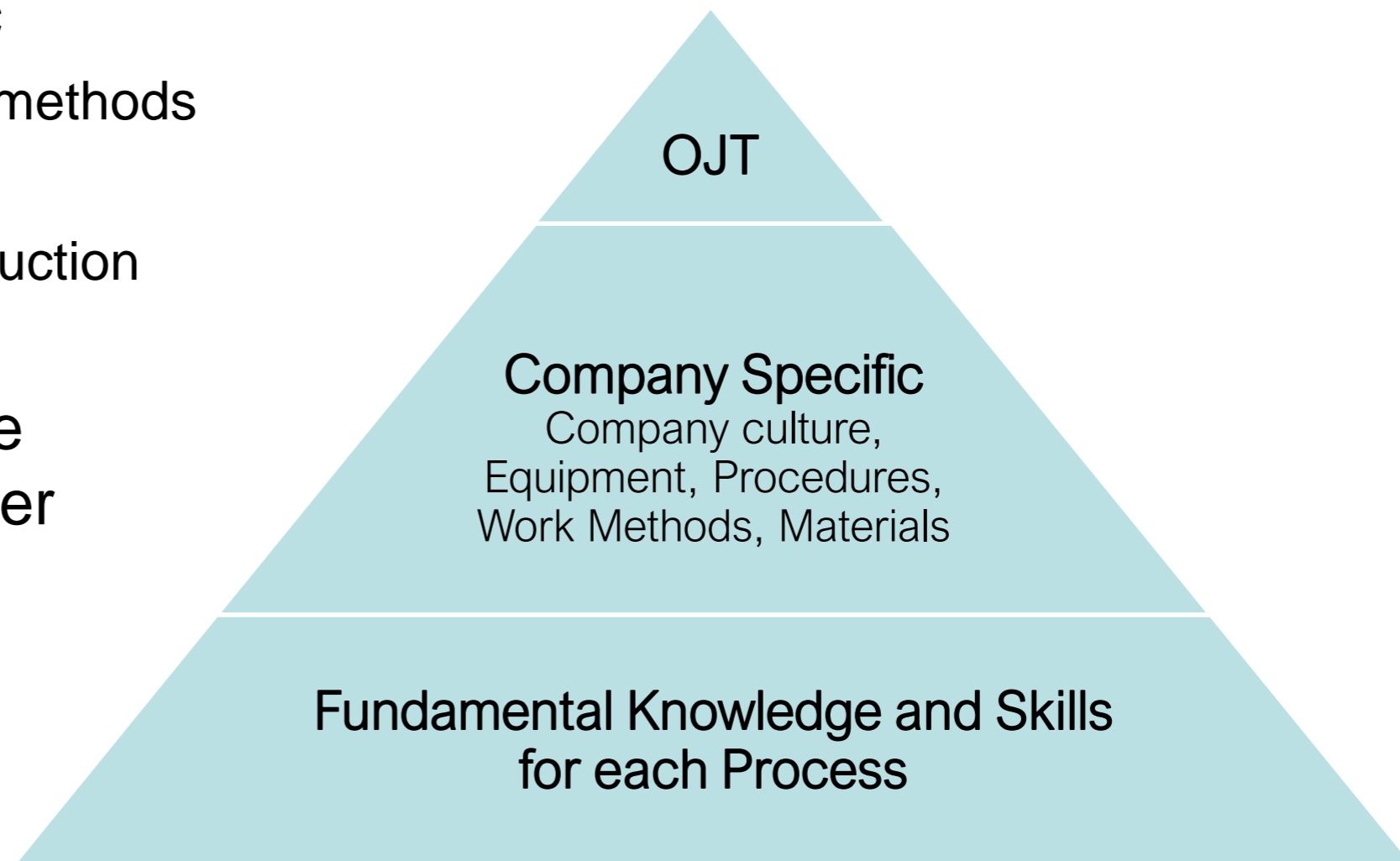


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May 23, 2006 Rev. D  
August 1, 2007 Rev. E  
September 3, 2008 Rev. F  
September 9, 2010 Rev. G  
October 5, 2011 Rev. H  
March 15, 2013 Rev. I  
May 27, 2015 Rev. J  
September 20, 2016 Rev. K  
May 1, 2018 Rev. L

# Training

## Major aspects of training:

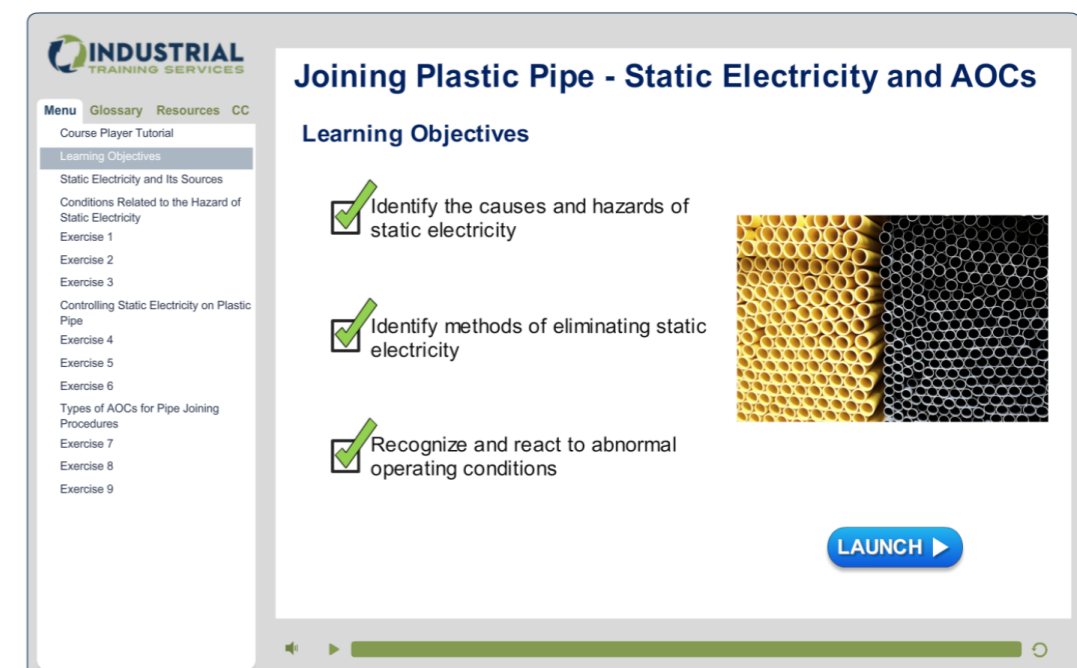
1. Core Skills – Fundamental knowledge, skill and ability to perform a given process including recognizing and reacting to AOCs (typically instructor-led with hands-on)
2. Company-specific
  - Procedures, work methods
  - Equipment
  - Materials of construction
  - Company Culture
3. OJT or Apprentice Programs to further practice and refine skills
4. Refresher



# Training Resources

## GTI Field Skills Training Program: Online Refresher Training:

- Instructor-led program with emphasis on fundamental processes
  - 70+ Modules
  - Slide Presentations, Leaders Guides, Participants Guide, Knowledge Checks, Videos, Hands-on Activities
  - Aligned with NGA OQ Program
  - NGA negotiated a license with GTI on behalf of all OQ participants. Available via the GTI website.
- 15 - 30 minute refresher module covering key aspects of each covered task.
  - Available online within the ITS *OnBoard* system. Hardcopies may be purchased from ITS.



# GTI Natural Gas Field Skills Training

- **Turn-key program**
- **Instructor-led format**

- **PowerPoint presentations**
- **Leader Guides**
- **Participant Guides**
- **Videos**
- **Knowledge Assessments**
- **Hands-on Activities**

## 70+ Modules 10 Areas

1. Overview
2. Construction
3. Corrosion Control
4. Pipeline Installation
5. Pipe Joining
6. Pipeline O&M
7. Pressure Regulation
8. Customer Service
9. Compressor Station O&M
10. Emergency Preparedness



# Integration of the GTI Field Skills Program

- GTI Field Skills Training Program is intended to cover the core fundamentals of gas distribution processes in an instructor-led, hands-on environment.
- The Field Skills Training Program is not intended to be the only training resource. This Program needs to be supplemented with training to:
  - ✓ Company operating procedures
  - ✓ Equipment operating procedures
  - ✓ Component/Materials of Construction
- Operators and Contractors have the ability to integrate components of the Field Skills Training Program with existing training resources and company/equipment-specific training.



# GTI Field Skills Training Program Updates

- Gap Analysis performed comparing OQ Domains/Elements to OQ Exams, GTI Training Modules, and Online/Refresher Training Modules


Natural Gas Field Skills Program
Participant Guides
Leader Guides
PowerPoints
Videos
Site Support

## Natural Gas Field Skills

Here you will find links to all the working documents for the Natural Gas Field Skills Program. Each team member will have the ability to download documents to facilitate easy file sharing. This will also serve as a centralized location to store relevant presentations.

GTI recently completed significant updates to the Field Skills Training Program based in large part by the feedback provided through NGA. For a detailed outline of program enhancements and revisions, please download the "Comparative Workbook Tool V6 – Revision Tracker Added" under the Announcements section on this webpage.

### Program Spreadsheets

Type	Name	File Size
Category Name : (3)		
	<a href="#">Comparative Workbook Tool V6 - Revision Tracker Added</a>	1597 KB
	<a href="#">GTI Field Skills</a>	73 KB
	<a href="#">Summary NGA OQ Task Description GTI Module Comparison</a>	53 KB



# Tracer Wire Example

## Gap Analysis and GTI Revision Status

Element Title	Critical Parameters	GTI		ITS
		(Y/N)	Revision Status	(Y/N)
Know how to install tracer wire	All PE pipe that is not encased must have an electrically conducting wire or other means of locating while it is underground	Y		Y
	<b>Install Procedure</b>			
	Wire should have minimal contact with pipe-for HDD	Y		Y
	Wire installed directly adjacent to pipe	Y		Y
	Verify signal continuity	Y		Y
	Tracer wire should be above aground in test station box	Y		Y
	Wire cannot be wrapped around the pipe	Y		Y
	Wire and all connections are resistant to corrosion	Y		N
	For PE HDD, tracer wire must be pulled in with the pipe and continuous	Y		Y
	Ensure tracer wire does not come into contact with plastic pipe	Y		Y
	Proper methods of protecting tracer wire connections from soil and moisture	Y		Y
	Tracer wire access points: -valve boxes -curb boxes -risers on services -manholes -vaults -other covered access devices	Y		Y
	Tracer wire access point should be clearly marked with type of facility(yellow for gas)	Y		N
	Conduct continuity test upon completion of install	Y		Y
Know how to install marker balls	<b>How to install marker balls</b>			
	Depth and spacing of install in relation to pipe depth	N	Module 6.21 Create new slides 40-51. <b>Done 12/30/20</b>	Y
	When to install markers balls: -at bends and depth changes -at valves, valve boxes or other gas components -at utility, road or other crossings	N		Y
	All PE pipe that is not encased must have an electrically conducting wire or other means of locating while it is underground	Y	Revised work book. Agree with GTI: Module 4.4 covers this topic.	Y
	Horizontal distance between pipe and marker balls	N	Module 6.21 Create new slides 40-51. <b>Done 12/30/20</b>	Y
Know how to respond to tracer wire failure	Replace or repair damaged section	N	Module 6.21 Update AOC section slides #130 & 131. <b>Done 12/30/20</b>	Y

# Elements of the Contractor Training Guideline



## GUIDELINE FOR COMPANY SPECIFIC CONTRACTOR TRAINING

### Guideline for Company Specific Contractor Training

#### Forward

#### 1. Scope

#### 2. API RP 1173 Pipeline Safety Management System (PSMS) Applicability

#### 3. Introduction

#### 4. Training Program Content, Delivery and Evaluation of Performance

#### 5. Technical Skills Demonstration

##### 5.1 Company Specific Performance Evaluations

##### 5.2 On-The-Job Training and Competency Evaluations (OJT)

#### 6. Contractor Training Program Assessments

#### 7. Contract or Other Work Agreement Training & Competency Demonstration Specifications

#### Appendix:

##### A. Sample Company Specific Contractor Training Program

##### B. Contractor Training Program Assessment Checklist

##### C. Contract / Work Agreement Requirement Consideration Checklist

##### D. Sample of Task Specific Training Requirements



Approved by: \_\_\_\_\_

Guideline No.19101.0

Date \_\_\_\_\_

Consistent **framework** to address core fundamentals of the process along with **company specific requirements** for procedures, equipment, and materials.

Flexible leading practice options for operators and contractors to consider.

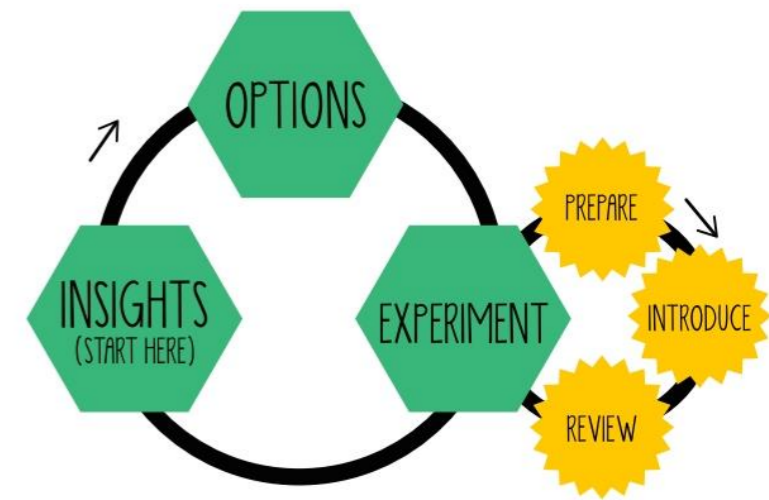
Recommended assessment methods and tools to help ensure desired outcomes are achieved.

## Operational Ownership

# Evolving OQ Models – the “Hybrid Model”

- Flexibility to integrate general industry with company-specific qualifications
  - Leverages common elements: online and performance evaluations; trainings, etc.
  - Reduces development, implementation, and maintenance costs
- Company-specific written/performance evaluations, where warranted
  - Where LDC requirements exceed or differ from industry training/evaluations
  - Demonstration of ability to navigate company operating procedures
  - Company and/or equipment-specific evaluations or “challenge tests”
- Hybrid Model:
  - Operators will define their company-specific Task List, integrating with industry training, tasks, and evaluations, where applicable
  - Developing system functionality to enable this company/industry hybrid approach

# “Hybrid OQ Models” Evolving OQ Models



## LDC Defined Task Profile (Example)

- NGA Covered Tasks
  - NGA Online Evaluation(s)
  - NGA Performance Evaluation(s)
- LDC Covered Tasks
  - LDC Written Evaluation(s)
  - LDC Performance Evaluation(s)
- LDC “Operating Procedure” Evaluation

## LDC Defined Task Profile (Example)

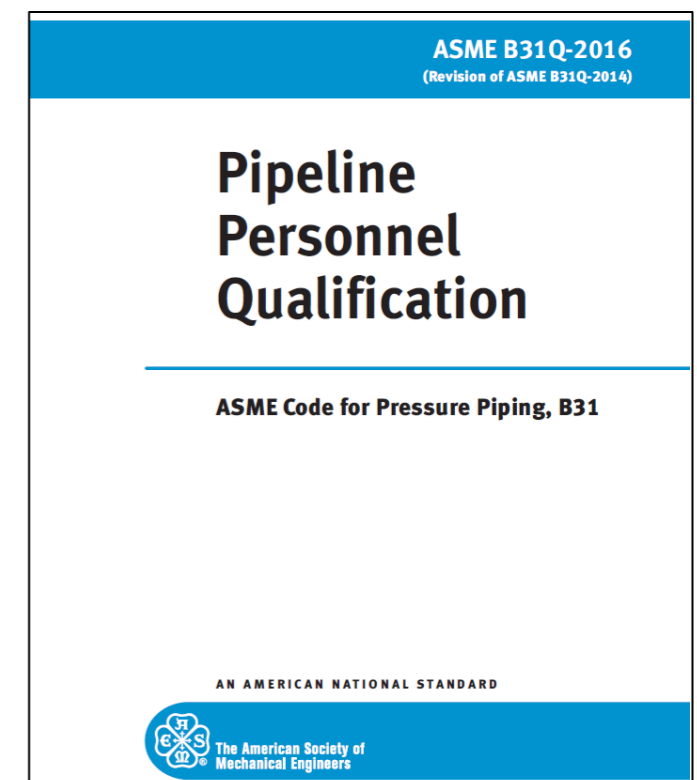
- Core Knowledge/Skill Training
- Company Specific Training
- NGA Covered Tasks
  - NGA Online Evaluation(s)
  - NGA Equipment-Specific Performance Evaluation(s)
- LDC Covered Tasks
  - LDC Written Evaluation(s)
  - LDC Performance Evaluation(s)
- Hybrid LDC Covered Tasks
  - NGA Online Evaluation(s)
  - LDC Performance Evaluation(s)

# Expansion of Performance Evaluations

- Analytical approach development based on ASME B31Q, Appendix F: Evaluation Method Selection
- Vast majority of tasks will have a performance evaluation
- New format – more interactive with use of questions for AOCs and key process parameters

***SME Teams are currently  
developing and reviewing new  
performance evaluations***

***Enhanced Workforce Competency  
& Pipeline Safety***



# Example Performance Evaluation

**COVERED TASK: 50 – Joining Plastic Pipe**

**PERFORMANCE EVALUATION: PJQ-13 – Permasert 2.0 Stab Fitting Manual**

**EVALUATOR TO PARTICIPANT RATIO: 1 TO 1**

**EVALUATION SETUP:**

**Material:** ½” – 2” Permasert 2.0 stab fitting (training fitting acceptable), plastic pipe, rags, leak soap

**Equipment:** marker, chamfer tool, ruler, plastic pipe cutters

**Evaluation set up:** table / work bench where individual can work to install the fitting on the pipe

**PPE:** per company requirements

**LOCATION:**

This skill assessment shall be conducted at a location that can accommodate the following performance demonstration elements:

1. Simulated gas pipe.
2. Installation of a Permasert 2.0 stab fitting.

**SCENARIO DESCRIPTION:**

The participant will demonstrate an understanding and process of installing a Permasert 2.0 stab fitting (without assist tool).

1. Checking pipe prior to installation.
2. Proper installation of fitting as per manufacturer’s instructions.

**REACTION TO SIMULATED ABNORMAL OPERATING CONDITIONS (AOC):**

During the evaluation, the participant will be asked about certain AOC conditions associated with this task. AOCs may include one or more of the following:

- Material defects
- Improper mechanical joint

# Example Performance Evaluation

## **INSTRUCTIONS TO PARTICIPANT:**

You are installing a service at 242 Jones Street, Anytown, USA. In the process you must install a Permasert 2.0 fitting onto the pipe.

You will be asked questions during the evaluation. You may also be required to verbally explain certain steps of the task as it is being performed. Take a moment to think about the questions and then respond.

## **PERFORMANCE STEPS:**

**Ask:** How do you know you have the correct fitting?

**Response guidance:**

**Observe:** Cut pipe end square

**Observe:** Clean pipe

**Observe:** Inspect pipe for defects

**Observe:** Chamfer pipe

**Ask:** After chamfering the pipe you realize you used the original Permasert chamfer tool. What would you do?

**Response guidance:**

**Observe:** Mark stab depth (chamfer tool / stab depth)

**Observe:** Stab pipe into fitting until it bottoms out

**Observe:** Stab mark within manufacturer's instructions

**Ask:** After stabbing the pipe into the fitting you see your stab mark does not meet the manufacturer's procedure. What would you do?

**Response guidance:**

**Observe:** Pressure / Leak test (verbal)

**Ask:** While performing your pressure / leak test you notice continuous bubbles in the soap. What would you do?

**Response guidance:**

# Development of Incremental Performance Evaluations

- ✓ Steering Committee and multiple SME teams formed
- ✓ Updated Task List based on PE Determination Process
- ✓ Enhanced PE format: incorporates AOC and process questions
- Development of Draft PE's by consultants with review(s) by SME teams
  - ✓ 77 Draft PE's Finalized for Beta Test
    - 23 Draft PE's in development
- Beta Test PE's (next step)
- Update of Task Sheets in Written Plan
- Mapping of old/new task structures within LMS
- Training for Evaluators on new performance evaluations
- Operators to determine use of industry or company specific PE
- Phased Roll Out of New Task Structure/Evaluations

## 3<sup>rd</sup> Party Support for Performance Evaluations

- Business Drivers:
  - Expansion of Performance Evaluations will increase the demand for evaluation services, which will drive the need for more resources within existing disciplines and new resources with specific expertise.
  - Additional management resources required for recruiting, training, management of change, etc.
  - Changing labor laws driving a change to the existing business model.
- Steering Committee oversight of the selection process
  - Process initiated in 2019; RFI and RFP in 2020
- Intent is to retain existing evaluator services as employees of the 3<sup>rd</sup> party firm, and then grow resource base as PE service demand increases.
- Transition targeted for mid-June 2021
- ASTAR, Inc. – Highly regarded, national provider of OQ training and qualification services, headquarters in OK, eastern division office in PA.

# Noteworthy OQ Initiatives and Activities

- OQ Newsletter
  - First OQ Newsletter sent on February 3, 2021
- 2021 Plastic Pipe Joining Manual
- Voice Over Exam Functionality
- Enhanced Suspend / DQ Process
- Development of Hybrid Model Functionality
- Documentation of Training – Guidance Document

## CT and NY proposed rules

- Two-part covered task – on a pipeline and affects safety
- Evaluation requires exam and hands-on skill and ability testing for every task
- Evaluation process must be performed by operator or independent third party
- Must reevaluate if task not performed correctly, not just after an incident
- Training required, including minimum training time per task
- Training and evaluation must match company's plans, procedures and standards
- Inspectors must be OQ'ed for the task(s) they are observing
- Engineering tasks added to OQ program
- Operator must measure effectiveness of OQ program

## CT and NY proposed rules



# Questions?

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➤ Discussion

➤ Thank you!